REMARKS

This Amendment is being filed in response to the Final Office Action mailed April 29, 2011, which has been reviewed and carefully considered. By means of the present amendment, claim 1 has been amended for better clarity. Entry of the present amendment and allowance of the present application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-3, 5-17, 19 and 41-43 are pending in the application, where claim 1 is independent.

In the Final Office Action, claims 1-3, 5-17, 19 and 41-43 are rejected under 35 U.S.C. §112, second paragraph. This rejection is traversed. However, in the interest of advancing prosecution, claim 1 has been amended for better conformance with 35 U.S.C. §112, second paragraph. It is respectfully submitted that this rejection of claims 1-3, 5-17, 19 and 41-43 under 35 U.S.C. §112, second paragraph is overcome. Accordingly, withdrawal of this rejection is respectfully requested.

In the Final Office Action, claims 1-3, 5-17, 19 and 41-42 are rejected under 35 U.S.C. §102(b) over a publication entitled "NMR characterization of a kissing complex formed between the TAR RNA element of HIV-1 and a DNA aptamer", (Collin) in light of a publication "Biomolecular NMR Spectroscopy" (Evans) and a publication "Gradient-tailored Excitation for Single-Quantum NMR Spectroscopy of Aqueous Solutions" (Piotto). As a claim is anticipated only if each and every element as set forth in the claim is found, either

expressly or inherently described in a single prior art reference, and as this rejections is based on multiple references, it is respectfully submitted that the Office Action has failed to make a prima facie case of anticipation. Applicant respectfully traverses and submits that claims 1-3, 5-17, 19 and 41-43 are patentable over Collin, Evans and Piotto for at least the following reasons.

Collin is directed to performing structural analysis of an RNA-DNA complex using homo- and hetero nuclear NMR spectroscopy where triple resonance. Three axis gradient probes are used to obtain and record points and proton spectra. No details are provided about using any magnetic particles, let alone using magnetic particles in two states, namely, agglomerated deagglomerated, producing different magnetic fields in two part-areas of an examination area, changing spatial positions of the two part-areas in the examination area, or changing the magnetic field strength in the first part-area to cause the change in the spatial distribution of magnetic particles so that magnetization of the particles is locally changed for determining local substance temperature, pressure, viscosity and/or pH.

Evans describes the basic theory of NMR discussing quantized nuclear spins, NMR absorption and transition between quantized energy levels. Heteronuclear shift correlation is described to obtain H-C correlation, using two simultaneous pulses of different frequencies. Further, two approaches are described to suppress water/solvent resonance. Magnetic properties of some biologically useful nuclei are provided in Table 1.2.

Piotto is concerned with water suppression using an RF pulse and two field gradient

pulses for rapid data collection and increased sensitivity to determine molecular structure. Piotto uses a particular pulse scheme shown in FIG 1, where two selective 90° RF pulses of opposite rotation and two magnetic field gradients are placed symmetrically to a non-selective 180° RF pulse.

Collin, Evans and Piotto are not concerned with evaluating any signals and correlating data to determine any local substance temperature, pressure, viscosity and/or pH. Rather, these references are concerned with obtaining better NMR spectra and determining the structure of molecules. Further, Collin, Evans and Piotto, alone or in combination are completely silent about introducing into the examination area magnetic particles in two states, namely agglomerated deagglomerated.

It is respectfully submitted that Collin, Evans, Piotto and combination thereof, do not disclose or suggest the present invention as recited in independent claim 1 which, amongst other patentable elements, recites (illustrative emphasis provided):

> **introducing** into the examination area **magnetic particles** in a first state or in a second state wherein, in the first state, at least some of the magnetic particles that are to be examined are **agglomerated** and/or coupled to one another and wherein, in the second state, the particles are **deagglomerated** and/or decoupled;
>
> generating a magnetic field having a strength with a spatial profile such that there is produced in the examination area **two part-areas** including a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength than the low magnetic field strength;
>
> changing spatial positions of the two part-areas in the examination area or changing the magnetic field strength in the first part-area...
>
> evaluating the signals so as to obtain information about the change in the spatial distribution of the magnetic particles and about physical, chemical and/or biological state variables, wherein the physical, chemical

and/or biological state variables include at least one of substance temperature, pressure, viscosity and pH;

correlating the change in the spatial distribution of the magnetic particles **in the examination** area with at least one of a local temperature, pressure, viscosity and pH value **to determine the at least one of the local substance temperature, pressure, viscosity and pH**;

determining the at least one of the local substance temperature, pressure, viscosity and pH; and

providing an indication of the determined at least one of the local substance temperature, pressure, viscosity and pH.

Determining local variables such as local substance temperature, pressure, viscosity and/or pH, and providing an indication thereof, by introducing into the examination area magnetic particles in two states, such as, agglomerated and deagglomerated states; generating a magnetic field of different strength in two part-areas of the examination area; changing spatial positions of the two part-areas; obtaining information about the change in the spatial distribution of the magnetic particles and correlating this change with the determined variables, are nowhere disclosed or suggested in Collin, Evans and Piotto, alone or in combination.

Collin, Evans, Piotto and combination thereof, do not even disclose or suggest introducing any magnetic particles in agglomerated and deagglomerated states, and are not concerned with determining local substance temperature, pressure, viscosity and/or pH. Rather, Collin describes using NMR spectroscopy for performing structural analysis of an RNA-DNA complex; Evans describes the basic theory of NMR discussing quantized nuclear spins and suppressing water/solvent resonance; and Piotto is concerned with water suppression to better determine molecular structure using NMR spectroscopy.

It is alleged on page 10, last paragraph of the Final Office Action, that page 3387, col. 1, lines 20 and 21 of Collin "teaches the evaluation of the collected data," and that FIG 1 of Collin is "relied upon to demonstrate that the information determined from the described NMR experiments involves and is directly correlated to sample concentration and pH dependencies."

These allegations are respectfully traversed. Page 3387, col. 1, lines 20 and 21 of Collin specifically recites "[f]or the ^{1}H-^{15}N experiment across hydrogen bonds, spectral widths of 5 and 88.8 p.p.m. were used ub F_2 and F_1, respectively." Such a disclosure has nothing to do with "determining the at least one of the local substance temperature, pressure, viscosity and pH," as recited in independent claim 1.

Further, FIG 1 of Collin merely shows various peaks indicating presence of proton resonances. Assuming, arguendo, that somehow this provide information related to concentration, to advance prosecution and expedite allowance, claim 1 has been amended to delete concentration. FIG 1 of Collin does not even disclose or suggest anything related to temperature, pressure, viscosity and pH, let alone disclosing or suggesting "determining the at least one of the local substance temperature, pressure, viscosity and pH," as recited in independent claim 1.

Accordingly, it is respectfully requested that independent claim 1 be allowed. In addition, it is respectfully submitted that claims 2-3, 5-17, 19 and 41-43 should also be allowed at least based on their dependence from independent claim 1 as well as their individually patentable elements. Accordingly, separate consideration of each of the

dependent claims is respectfully requested.

In addition, Applicant denies any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicant reserves the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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